

Low shock, damped opening and closing
 Differential pressure possible on either side

Proven design, used in large research and industrial systems as well as in space simulation



Series 190 HV gate valve



Series 192 UHV gate valve

Body material

stainless steel

Pneumatic actuator

double acting
 with position indicator
 with solenoid

| DN | | Ordering numbers (specify control voltage) | |
|------|------|--|---------------------------------------|
| mm | inch | Series 190 HV gate valve ISO-F | Series 192 UHV gate valve ISO-F |
| 400 | 16 | 19052-PE44 | 19252-PE44 |
| 500 | 20 | 19054-PE44 | 19254-PE44 |
| 630 | 25 | 19056-PE44 | 19256-PE44 |
| 800 | 32 | 19058-PE44 | 19258-PE44 |
| 900 | 36 | 19059-PE44 | 19259-PE44 |
| 1000 | 40 | 19060-PE44 | 19260-PE44 |
| 1250 | 50 | 19062-PE44 | 19262-PE44 |

without position indicator, without solenoid: 19 . . . - . E14

with position indicator, without solenoid: 19 . . . - . E24

Other sizes

on request

Projects for special versions

Our product groups are experienced in developing special requirements concerning material, stability, heaters, etc. On customer request, we can perform special test programs, bakeout and provision of customer specific hand-over quality documentation.

Acceptance tests

are conducted for large special projects, and are prepared by our engineers.

References

Large VAT gate valves have proved their reliability in various large systems all over the world. Reference list available on request.

Sealing materials

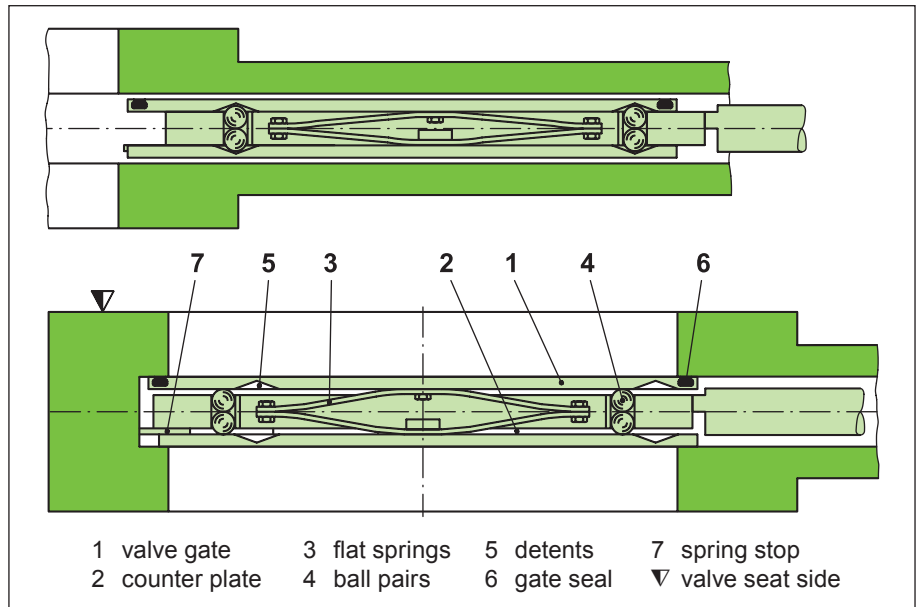
Gate: FKM (VITON)

Bonnet: FKM (VITON)

Feedthrough

HV gate valve: shaft feedthrough

UHV gate valve: bellows

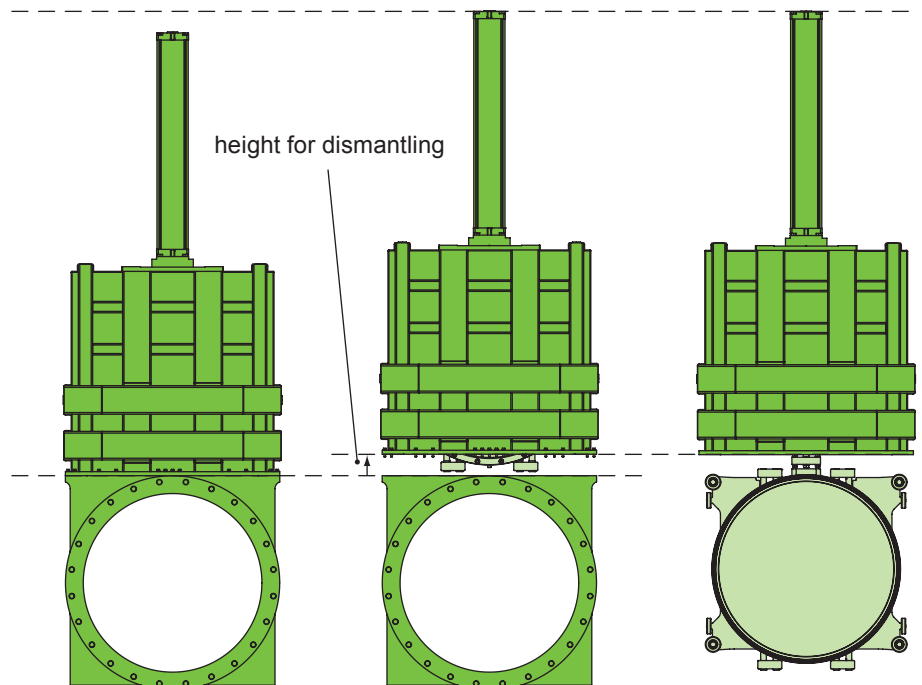


Features

Proved VATLOCK configuration (see glossary)

Assembly in cleanroom according to UHV quality standards

DN 900 - 1250 HV with split body: hence extremely short height for dismantling and convenient maintenance (see illustration below)



• Move valve gate to the position «open»

• Unscrew actuator part of body and lift it off from flange part (flange part remains in the system)

• Move valve gate to the position «closed» and carry out maintenance work

Technical data

| | |
|------------------------------------|---|
| Leak rate: body, valve seat | < 1 · 10 ⁻⁹ mbar ls ⁻¹ |
| Pressure range | |
| - HV gate valve | 1 · 10 ⁻⁷ mbar to 1 bar (abs) |
| - UHV gate valve | 1 · 10 ⁻⁹ mbar to 1 bar (abs) |
| Differential pressure on the gate | ≤ 1 bar in either direction |
| Differential pressure at opening | |
| - DN 400 - 500 | ≤ 20 mbar |
| - DN 630 - 1250 | ≤ 10 mbar |
| Cycles until first service | |
| - DN 400 - 500 HV | 100 000 |
| - DN 630 HV / 400 - 630 UHV | 20 000 |
| - DN 800 - 1250 HV + UHV | 10 000 |
| Temperature ¹⁾ | |
| - Valve body | ≤ 150°C |
| - Pneumatic actuator | ≤ 50°C |
| - Solenoid | ≤ 50°C |
| - Position indicator | ≤ 80°C |
| Heating and cooling rate | |
| - 400 - 630 | ≤ 30°C h ⁻¹ |
| - 800 - 1250 | ≤ 5°C h ⁻¹ |
| Material | |
| - Valve body | AISI 304 (1.4301) |
| - Bellows (UHV gate valve only) | AISI 316L (1.4435) or AISI 304L (1.4306) EN AW-6060 (3.3206), AISI 304 (1.4301) |
| - Valve gate, counter-plate | EN AW-6060 (3.3206), AISI 304 (1.4301), Nimonic, AISI 420 (1.4034), AISI 301 (1.4310) |
| - Mechanism | |
| Seal: bonnet, gate | FKM (VITON) |
| Mounting position | actuator horizontal or vertical («actuator down» on request) |
| Solenoid | 24 VDC, 8 W (others see «Options») |
| Position indicator: contact rating | |
| - Voltage | <u>HV</u> ≥ 240 VAC ≥ 170 VDC <u>UHV</u> 250 VAC |
| - Current | ≥ 0.18 A 10 A (3A) AC |
| - Power | max. 10 W - |

¹⁾ Maximum values: depending on operating conditions and sealing materials

| DN (nominal I. D.) | | molecular flow conductance | compressed air pressure min. - max. overpressure | | | | volume of air cylinder | | | | closing or opening time | | weight | | | |
|-----------------------|------|-------------------------------|---|----------|-------|----------|---------------------------|-----------------|------|-----------------|----------------------------|-----|--------|------|------|------|
| | | | HV | | UHV | | HV | | UHV | | HV | UHV | HV | | UHV | |
| mm | inch | ls ⁻¹ | bar | psi | bar | psi | l | ft ³ | l | ft ³ | s | s | kg | lbs | kg | lbs |
| 400 | 16 | 50 000 | 5 - 7 | 70 - 100 | 5 - 9 | 70 - 130 | 5.9 | 0.208 | 1.8 | 0.63 | 10 | 12 | 140 | 309 | 160 | 353 |
| 500 | 20 | 90 000 | 5 - 7 | 70 - 100 | 5 - 9 | 70 - 130 | 6.8 | 0.240 | 3 | 0.11 | 12 | 12 | 200 | 441 | 235 | 518 |
| 630 | 25 | 190 000 | 5 - 7 | 70 - 100 | 6 - 9 | 85 - 130 | 8.6 | 0.304 | 4.7 | 0.16 | 15 | 18 | 320 | 706 | 405 | 893 |
| 800 | 32 | 320 000 | 5 - 7 | 70 - 100 | 6 - 9 | 85 - 130 | 17.9 | 0.632 | 11 | 0.28 | 20 | 80 | 580 | 1279 | 710 | 1565 |
| 900 | 36 | 405 000 | 5 - 7 | 70 - 100 | 6 - 9 | 85 - 130 | 20.8 | 0.735 | 15 | 0.33 | 23 | 100 | 1000 | 2200 | 1400 | 3086 |
| 1000 | 40 | 550 000 | 5 - 7 | 70 - 100 | 6 - 9 | 85 - 130 | 21.9 | 0.773 | 18 | 0.38 | 25 | 110 | 1200 | 2645 | 1700 | 3748 |
| 1250 | 50 | 900 000 | 5 - 7 | 70 - 100 | 6 - 9 | 85 - 130 | 43 | 1.519 | 25.5 | 0.95 | 30 | 120 | 1900 | 4189 | 2500 | 5512 |

Options

Actuator:

- Solenoid for impulse actuation:
 - Power failure: last valve position is maintained
 - Compressed air failure: valve closed - valve remains closed
valve open - valve position is undefined
- Solenoid for impulse actuation and non-return valve:
 - valve position is undefined at power failure and compressed air failure
- Solenoid separate, for external mounting
- Solenoid for 12, 48 VDC
 - 24, 48, 100, 115, 200, 220 V / 50 Hz
 - 24, 100, 115, 200, 220 V / 60 Hz
- Mechanical position indicator (Series 190)
- Lockable actuator

Valve:

- All standard flanges available (ISO, ASA, ASA-LP, JIS)
- Customer specified flanges
- Water-cooled flanges
- Metal static seals
- Ports for roughing (by-pass), venting or for gauges
- Bake-out equipment
- 3-position actuator
- Protective ring
- Heat protection shield
- Other sizes

Ordering information for options:

Ordering No. of valve-X (e. g. 19254-PE44-X,
X = port as per enclosed dimensional drawing)

Accessories

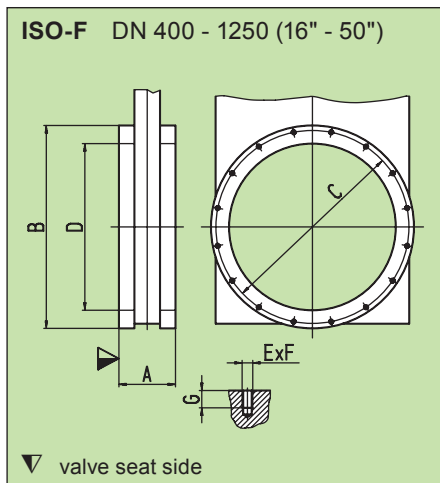
Blank flanges for testing and bake-out

Seal kit

Consisting of seals for bonnet, gate and actuator

Ordering No.: see operating manual

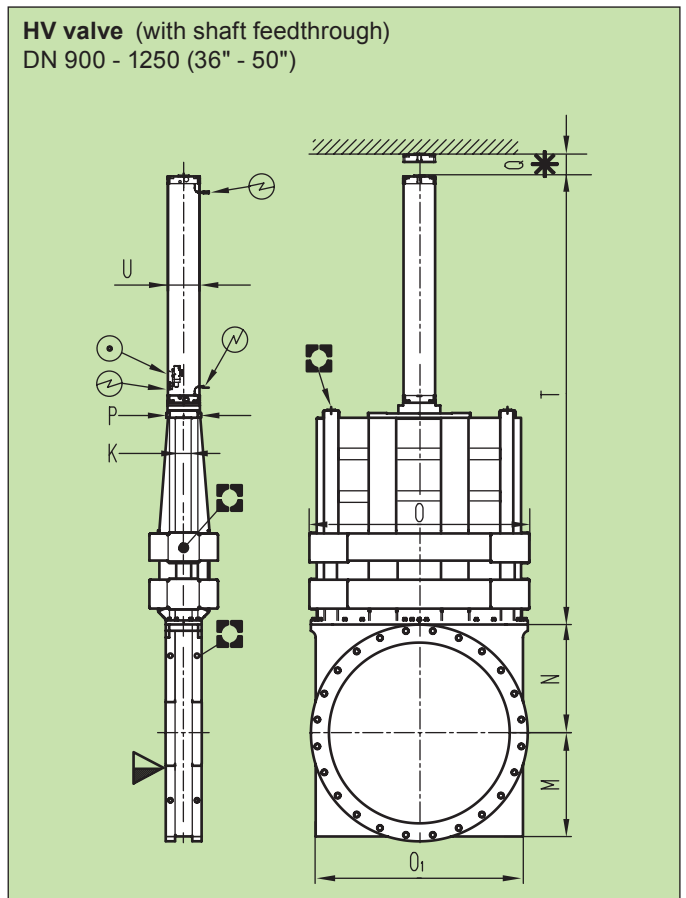
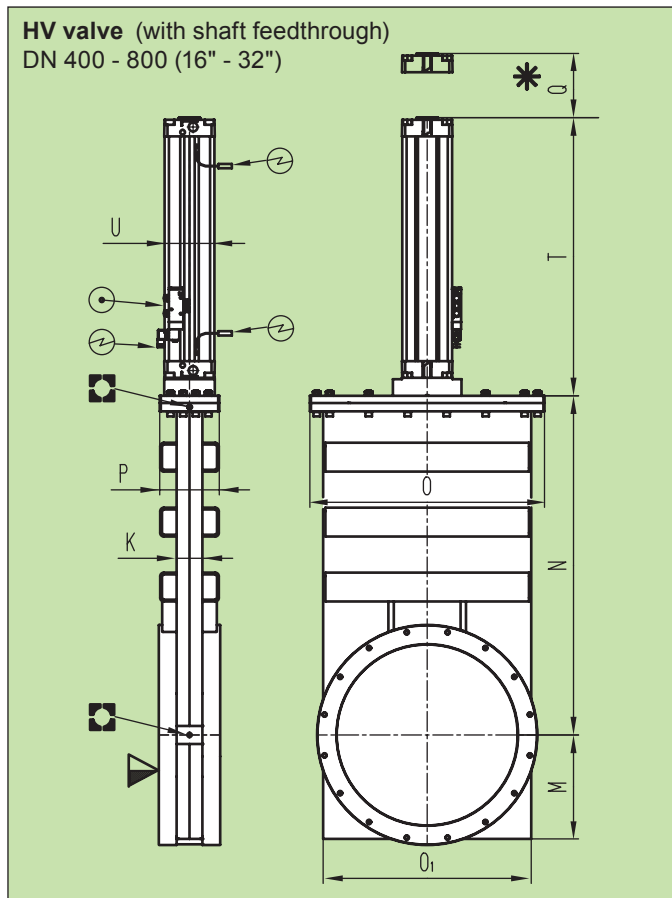
Flange dimensions



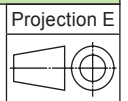
| | | HV and UHV valve | | | | | | |
|-------|------------|------------------|--------------|--------------|--------------|-------------|---------------|---------------|
| DN | mm inch | 400 16 | 500 20 | 630 25 | 800 32 | 900 36 | 1000 40 | 1250 50 |
| A | mm inch | 150 5.9 | 170 6.69 | 180 7.09 | 220 8.66 | 220 8.66 | 240 9.45 | 260 10.24 |
| B | mm inch | 510 20.08 | 610 24.02 | 780 30.71 | 960 37.8 | - | 1168 46 | 1500 59.05 |
| C | mm inch | 480 18.9 | 580 22.83 | 720 28.35 | 890 35.04 | - | 1090 42.91 | 1370 53.94 |
| D | mm inch | 400 15.75 | 501 19.72 | 651 25.63 | 800 31.5 | 900 35.4 | 1000 39.37 | 1250 49.21 |
| E x F | | 16 x M12 | 16 x M12 | 20 x M12 | 24 x M12 | - | 32 x M12 | 32 x M16 |
| G | mm inch | 20 0.79 | 20 0.79 | 20 0.79 | 20 0.79 | - | 20 0.79 | 25 0.98 |

Dimensions for ASA and JIS flanges on request

Main dimensions



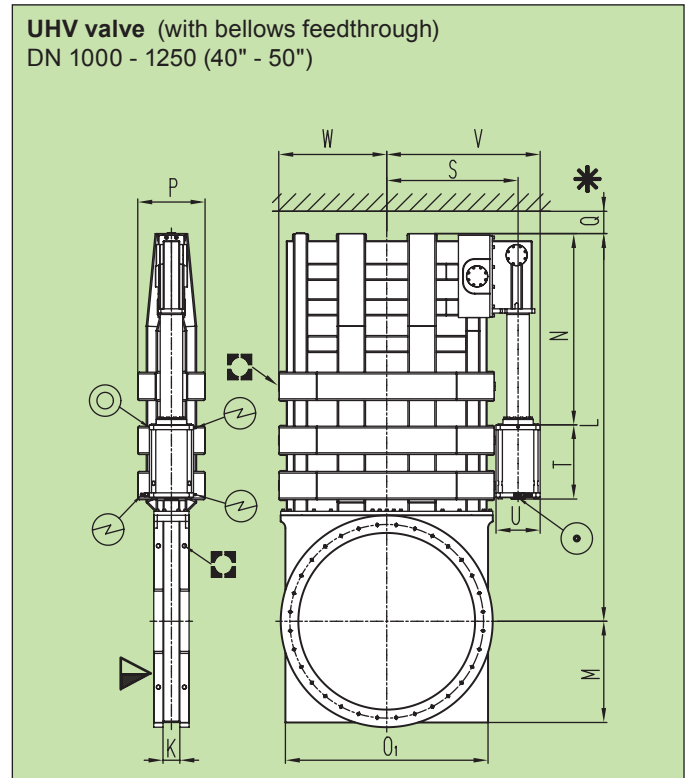
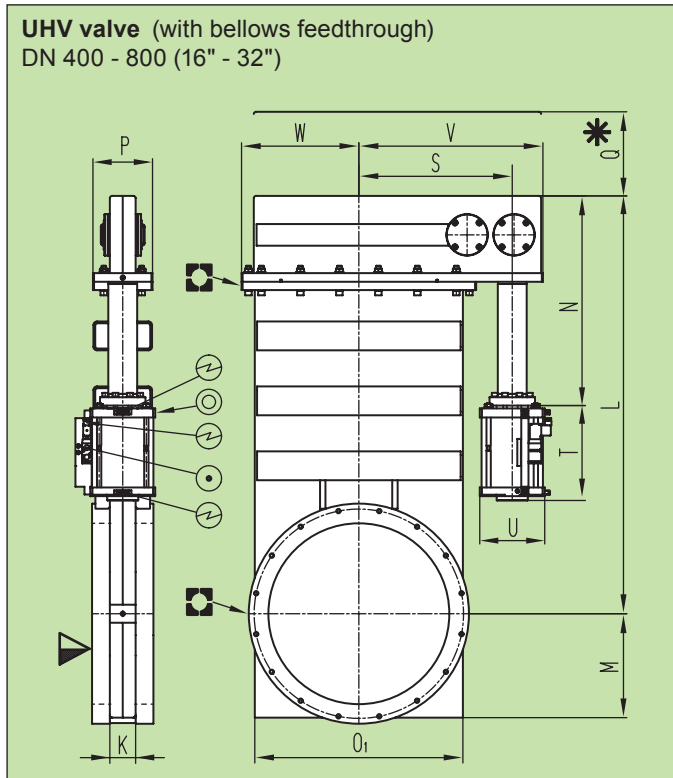
- ▽ valve seat side
- ⊠ for attachment
- * required for dismantling
- ⊙ leak detection hole
- ⊕ compressed air connection
- ⊖ electrical connection



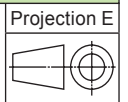
| DN | mm | 400 | 500 | 630 | 800 |
|----|------|-------|-------|-------|-------|
| | inch | 16 | 20 | 25 | 32 |
| K | mm | 67 | 77 | 80 | 98 |
| | inch | 2.64 | 3.03 | 3.15 | 3.85 |
| M | mm | 233 | 291 | 366 | 446 |
| | inch | 9.17 | 11.46 | 14.41 | 17.56 |
| N | mm | 794 | 940 | 1195 | 1440 |
| | inch | 31.26 | 37 | 47.05 | 56.69 |
| O | mm | 525 | 650 | 806 | 990 |
| | inch | 20.67 | 25.6 | 31.73 | 38.98 |
| O1 | mm | 467 | 582 | 738 | 920 |
| | inch | 18.39 | 22.91 | 29.05 | 36.22 |
| P | mm | 148 | 165 | 240 | 340 |
| | inch | 5.83 | 6.5 | 9.45 | 13.39 |
| Q | mm | 600 | 700 | 850 | 1050 |
| | inch | 23.62 | 27.56 | 33.46 | 41.34 |
| T | mm | 670 | 773 | 930 | 1108 |
| | inch | 26.34 | 30.44 | 36.61 | 43.62 |
| U | mm | 115 | 115 | 115 | 150 |
| | inch | 4.53 | 4.53 | 4.53 | 5.9 |

| DN | mm | 900 | 1000 | 1250 | |
|----|------|-------|-------|--------|--|
| | inch | 36 | 40 | 50 | |
| K | mm | 87 | 116 | 116 | |
| | inch | 3.43 | 4.57 | 4.57 | |
| M | mm | 512 | 562 | 716 | |
| | inch | 20.16 | 22.13 | 28.19 | |
| N | mm | 530 | 584 | 750 | |
| | inch | 20.87 | 22.99 | 29.50 | |
| O | mm | 1120 | 1209 | 1529 | |
| | inch | 44.09 | 47.60 | 60.20 | |
| O1 | mm | 1024 | 1124 | 1433 | |
| | inch | 40.31 | 44.25 | 56.42 | |
| P | mm | 210 | 240 | 240 | |
| | inch | 8.27 | 9.45 | 9.45 | |
| Q | mm | 100 | 150 | 150 | |
| | inch | 3.94 | 5.91 | 5.91 | |
| T | mm | 2376 | 2497 | 3114 | |
| | inch | 93.54 | 98.31 | 122.60 | |
| U | mm | 184 | 218 | 218 | |
| | inch | 7.24 | 8.58 | 8.58 | |

Main dimensions



- ▽ valve seat side
- ⊠ for attachment
- * required for dismantling
- ⊙ leak detection hole
- ⊕ compressed air connection
- ⊖ electrical connection



| DN | mm | 400 | 500 | 630 | 800 |
|----|------|-------|-------|-------|-------|
| | inch | 16 | 20 | 25 | 32 |
| K | mm | 70 | 77 | 80 | 96 |
| | inch | 2.76 | 3.03 | 3.15 | 3.78 |
| L | mm | 958 | 1160 | 1433 | 1750 |
| | inch | 37.72 | 45.67 | 56.41 | 68.89 |
| M | mm | 235 | 291 | 366 | 460 |
| | inch | 9.25 | 11.46 | 14.41 | 18.11 |
| N | mm | 490 | 591 | 682 | 1050 |
| | inch | 19.29 | 23.26 | 26.53 | 41.34 |
| O1 | mm | 470 | 582 | 738 | 920 |
| | inch | 18.5 | 22.91 | 29.06 | 36.22 |
| P | mm | 150 | 165 | 240 | 340 |
| | inch | 5.91 | 6.5 | 9.45 | 13.39 |
| Q | mm | 600 | 1400 | 1600 | 1050 |
| | inch | 23.62 | 55.12 | 62.99 | 41.34 |
| S | mm | 340 | 425 | 503 | 626 |
| | inch | 13.39 | 16.73 | 19.8 | 24.64 |
| T | mm | 225 | 255 | 272 | 373 |
| | inch | 8.86 | 10.03 | 10.7 | 14.68 |
| U | mm | 180 | 180 | 220 | 262 |
| | inch | 7.09 | 7.09 | 8.66 | 10.31 |
| V | mm | 470 | 524 | 630 | 757 |
| | inch | 18.5 | 20.63 | 24.8 | 29.8 |
| W | mm | 263 | 325 | 417 | 505 |
| | inch | 10.35 | 12.79 | 16.41 | 19.88 |

| DN | mm | 1000 | 1250 | | |
|----|------|-------|--------|--|--|
| | inch | 40 | 50 | | |
| K | mm | 106 | 122 | | |
| | inch | 4.17 | 4.8 | | |
| L | mm | 2182 | 2712 | | |
| | inch | 85.9 | 106.77 | | |
| M | mm | 560 | 712 | | |
| | inch | 22.05 | 28.03 | | |
| N | mm | 1100 | 1322 | | |
| | inch | 43.3 | 52.04 | | |
| O1 | mm | 1120 | 1424 | | |
| | inch | 44.09 | 56.06 | | |
| P | mm | 420 | 482 | | |
| | inch | 16.53 | 18.97 | | |
| Q | mm | 1250 | 1600 | | |
| | inch | 49.21 | 62.99 | | |
| S | mm | 800 | 932 | | |
| | inch | 31.49 | 36.69 | | |
| T | mm | 425 | 525 | | |
| | inch | 16.73 | 20.66 | | |
| U | mm | 324 | 312 | | |
| | inch | 12.75 | 12.28 | | |
| V | mm | 1021 | 1088 | | |
| | inch | 40.19 | 42.83 | | |
| W | mm | 610 | 760 | | |
| | inch | 24.02 | 29.92 | | |